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PETITIONS OFFICE

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Morgan, Lewis
& Bockius LLP
COUNSELLORS AT LAW

FAX MESSAGE

Send to:

(1) Name: Petitions Branch
Firm: USPTO

Group Art Unit 1632 FAX Number: 703-308-6916
Telephone Number: 703-305-9282

From:

Name: Bonnie Weiss McLeod

Telephone Number: 202 739-6150

Floor:

Date Sent: July 2, 2003

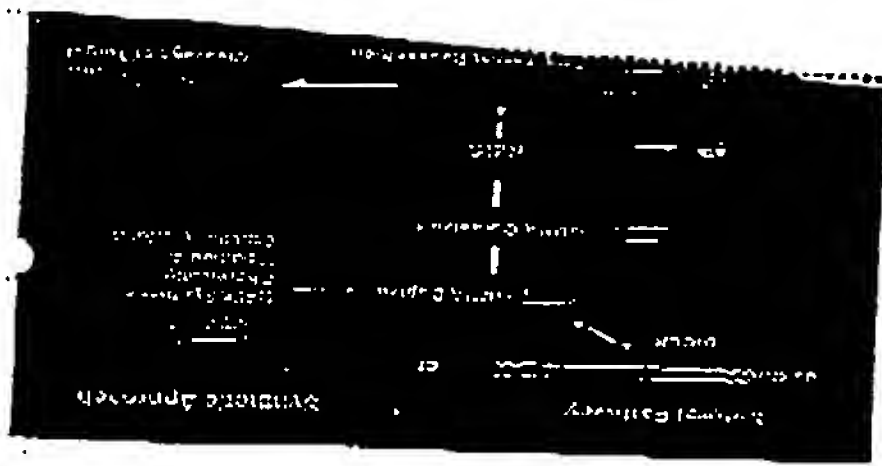
Number of Pages (INCLUDING COVER PAGE):

Note:

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Comments:

Rc. U.S. Patent No. 6,506,559
Application No.: 09/215,257
Our Reference No.: 056100-5021



most advanced protein-based on...
RNAi...
Genetic Engineering...
Therapeutic Approach...

RNAi Technologies

GENETIC ENGINEERING NEWS

Volume 22, Number 21, December 2002

RNAi...
Genetic Engineering...
Therapeutic Approach...

U.S. Patent No.: 6,506,559

Attorney Docket No.: 056100-5021-01US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:

Andrew Z. FIRE *et al.*

U.S. Patent No.: 6,506,559

Application No.: 09/215,257

Filed: December 18, 1998

Issued: January 14, 2003

For: GENETIC INHIBITION BY
DOUBLE STRANDED RNA

Commissioner of Patents
U.S. Patent and Trademark Office
2011 South Clark Place
Customer Window, Mail Stop Petition
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

FAX RECEIVED
JUL 02 2003
PETITIONS OFFICE

STATUS REQUEST LETTER REGARDING
PETITION UNDER 37 C.F.R. § 1.182
TO REPRINT THE FRONT PAGE OF THE LETTERS PATENT

This letter is to request the status of the Petition Under 37 C.F.R. § 1.182 to Reprint the Front Page of the Letters Patent, filed on January 22, 2003 (copy of petition and associated papers are attached hereto). According to a telephone conference with a member of the Petitions Branch this morning, the petition was entered but has not been acted upon. The undersigned requests to be contacted by telephone regarding the status of this petition and further requests immediate consideration of the petition if it has not yet been considered.

Respectfully submitted,

Paul N. Kokulis
Paul N. Kokulis
Reg. No. 16,773

CUSTOMER NO.: 009629
MORGAN, LEWIS & BOCKIUS LLP
1111 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
Telephone: 202-739-3000

RNAi Technologies

Continued from page 1

The siRNA expression vector technology is an important addition to this product line, according to Matt Winkler, CEO of AduBio.

"RNA interference is revolutionizing the field of functional genomics. Because siRNA expression vectors permit long-term RNAi studies, they represent an extremely important development in the field," he notes.

RNAi, a natural phenomenon that was first described in plants and later in animals, is serving the biotechnology industry as a tool to not only down-regulate genes but to aid the search for new drugs. Like antisense, RNAi works by sequence-specific gene inactivation.

Supporters of this new technology say that RNAi does not face the initial problems encountered by immunization with sense compounds. Initially antisense suffered because single-stranded RNA was unstable and degraded too rapidly to have a significant therapeutic effect. It was necessary to chemically modify antisense molecules to extend the normal life.

(Originally, antisense was not potent at low doses leading to toxicity concerns. RNAi provides longer-acting gene inhibition at lower concentrations than required by antisense oligonucleotides.)

Natural Mechanism

Unlike antisense, RNAi silences genes by a natural mechanism using stable double-stranded RNAi (dsRNAi) to trigger mRNA destruction. dsRNAi essentially activates a catalytic pathway that is part of a cell's normal defense system. Specificity is based on using the sequence of one strand of dsRNAi to match the mRNA target. In nature, long sequences of dsRNA are cleaved into small interfering RNAi.

But introducing long segments of dsRNA can activate an interference or stress response in mammals. This nonspecific cytotoxic effect is seen as a generalized shut down of genes and the resultant apoptosis. Using short sequences of less than 60 base pairs of dsRNA does not provoke this cell-death response and generates the catalytic destruction of mRNA resulting in gene silencing.

RNAi technology is a lower cost alternative that offers a significant time savings, compared with the labor-intensive homologous recombination methods for establishing knockout models to study gene expression. With RNAi it is also possible to study the lethal phenotypes that are unattainable from gene knockout technology.

Companies Founded

Based on its promise for increasing the expression of specific genes, several companies were founded to develop RNAi therapies only a few years after RNAi research was first

published in 1998. Among the companies that are primarily pursuing RNAi are Ribopharm (Arlington, Germany), Genix Bioscience (Dresden, Germany), and Seneca (St. Lucia, Australia). Each of the companies is pursuing patent protection for RNAi technology.

In August, the European Patent Office granted Ribopharm a patent covering the method for using 25-base pair dsRNA (siRNA) to inhibit gene expression. The company is using this patented technology to make inhibitory compounds that are active at a low dose and have only minor side effects.

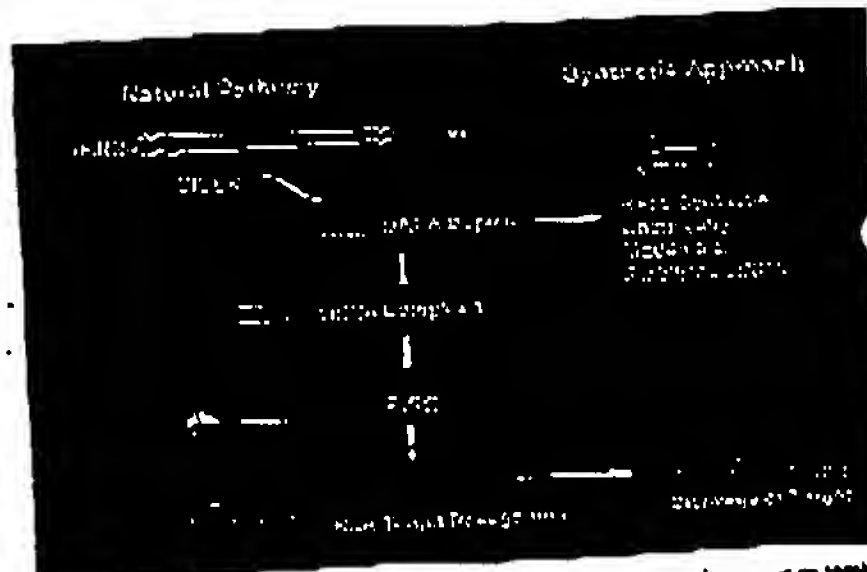
Product development is aimed at switching off cancer and viral genes. Ribopharm expects that the

most advanced product based on siRNA (small interfering RNA duplex) compounds will enter clinical testing soon in patients with melanoma.

"We own an issued patent covering the use of short double-stranded siRNA for inducing RNA interference," says Ulrich Hodder Ph.D., vp of business development. "A German patent was granted in April and covers the use of RNAi that has sticky ends on either one side or both sides of the molecule."

"The European Patent Office granted another patent in July that covers the use of small interfering siRNA up to 25 base pairs long."

See RNAi technologies on page 70



The natural RNAi pathway uses a nuclease called Dicer to process endogenous or foreign dsRNA molecules into small fragments of 21-23 base pairs. These siRNA fragments then assemble with a protein complex called the RNA-induced silencing complex, which uses one strand of the siRNA to specifically target mRNA or viral RNA for cleavage. siRNAs are highly resistant to nucleic acid degradation and modified siRNAs are highly resistant to nucleic acid degradation in serum and other biological fluids in vivo and in vitro.

Make your world a better plates!

The five brilliant colors of the Eppendorf Twin.tec PCR plates are what first catch the eye. But the very next thing is their technological distinctiveness.

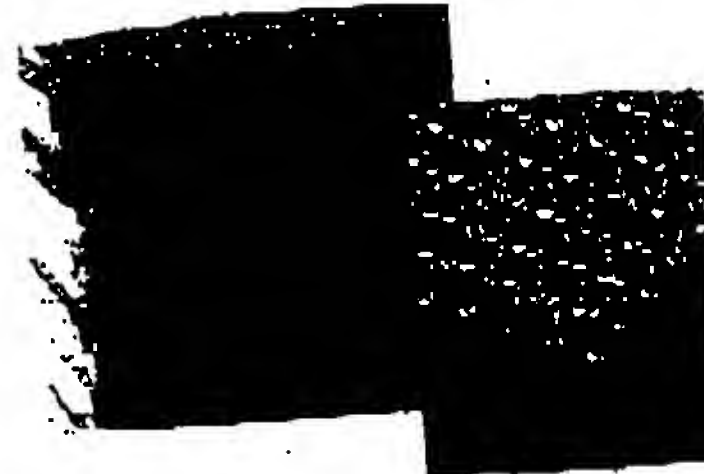
2 materials are combined in 1 plate!

The wells are made of virgin polycarbonate. The plate surface and the frame are made of polycarbonate.

The advantages for the user are obvious:

- Outstanding rigidity
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 - for easy removal of the plate after PCR
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- Certified free of human DNA, DNase, RNase and PCR inhibitors
- Compatible for the Eppendorf 96-Well-Mastercycler, suitable for all common thermocyclers

Eppendorf Twin.tec PCR plates are available as skirted and non-skirted plates designed for 160 and 250 µl inner well volumes. The skirted plate corresponds to the "SBS standard" and is optimized for automated applications. Thanks to its low profile design, it is extremely efficient when used with small volumes of samples.



Eppendorf is a registered trademark of Eppendorf AG

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Biotech News
Updated Daily:
www.genengnews.com

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:

Andrew Z. FIRE *et al.*

U.S. Patent No.: 6,506,559

Application No.: 09/215,257

Filed: December 18, 1998

Issued: January 14, 2003

For: GENETIC INHIBITION BY
DOUBLE STRANDED RNA

PETITION UNDER 37 C.F.R. § 1.182
TO REPRINT THE FRONT PAGE
OF THE LETTERS PATENT

** Hand-Carry To Office Of Petitions
Crystal Plaza 4, Room 3-C23 **

FAX RECEIVED

JUL 02 2003

PETITIONS OFFICE

Office of Petitions
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This is a Petition under 37 C.F.R. § 1.182 to request that the front page of the attached original Letters Patent be corrected and reprinted to include the correct names of the assignees. Accompanying this petition is a second petition requesting that the rules under 37 CFR §3.81(a) be waived to permit the correct names of the assignees of the above-mentioned patent to be provided after issuance.

On October 22, 2002, Applicant's agent submitted two copies of Issue Fee Transmittal Form PTOL-85 noting the sole assignee as "Carnegie Institute of Washington." This assignee designation was erroneous in two respects:

- (1) A second assignment to "The University of Massachusetts" was recorded on March 19, 1999, at Recd/Frame 009825/0207 (copies of the Notice of Recordation and assignment documents are attached hereto); and
- (2) "Carnegie Institute of Washington" contains an inadvertent error in that the word "Institute" should actually be "Institution" (see copies of Notice of Recordation and assignment

attached hereto). Thus, the correct name of the first assignee should be "Carnegie Institution of Washington," and "The University of Massachusetts" should be included on the face of the patent as the second assignee. As explained in the attached petition under 37 CFR §1.183, the error was inadvertent and due to high public interest, the Office should reprint the first page, particularly in view of patentee's promptness in seeking the requested relief.

According to 37 CFR §1.182, all situations not specifically provided for in the regulations will be decided in accordance with the merits of each situation by or under the authority of the Commissioner. The Commissioner therefore has the authority to approve reprinting of the first page of the Letters Patent. While Applicant is aware that the original Letters Patent is reprinted only under very rare circumstances, as explained in the attached Petition under 37 CFR §1.183, justice requires that the correct assignees be named on the face of the patent in the present case.

The above-mentioned patent covers one of the most important inventions of the year, an invention that is jointly owned by Carnegie Institution of Washington and The University of Massachusetts. The importance of the invention is emphasized by several scientific articles submitted herewith and discussed in the accompanying petition under 37 CFR §1.183. Given the importance of the invention and the number of readers that will no doubt request a copy of the patent, it is only fair that both of the owners of this important invention are shown on the face of the patent. Listing the second assignee in a certificate of correction rather than on the face of the patent would not serve justice adequately, since the face of the patent would be viewed by potential readers much more frequently than a certificate attached to the patent. Failure to correct the face of the patent to reflect the names of both assignees would rob the second

(Continued)

ATTORNEY DOCKET NO.: 056100 5021 01

Patent No.: 6,506,559

Petition Under 37 C.F.R. § 1.182 - Page 3

assignee of its due recognition as a co-owner of the invention, an injustice that should not prevail solely because the Applicant's agent made an inadvertent error in completing the PTOL-85 form.

The \$130.00 petition fee required by 37 C.F.R. § 1.17(h) is being submitted with this Petition. The Commissioner is hereby authorized to charge any additional fees, or credit any overpayment, to Deposit Account 50-0310.

Respectfully submitted,

MORGAN, LEWIS & BOCKTUS LLP

Bonnie Weiss-McLeod

Bonnie Weiss-McLeod, Ph.D.

Reg. No. 43,255

January 22, 2003

CUSTOMER NO.: 009629

MORGAN, LEWIS & BOCKTUS LLP

1111 Pennsylvania Avenue, N.W.

Washington, D.C. 20004

Telephone: 202-739-3000

Facsimile: 202-739-3001

Attachments:

- Petition under 37 CFR §1.183 to Waive the Rules under 37 CFR §3.81(a)
- Notice of Assignment recordation and assignment for University of Massachusetts
- Notice of Assignment recordation and assignment for Carnegie Inst. of Washington
- Letters Patent
- Journal article: Science, Dec. 2002, Vol. 298, pages 2296-97
- Journal article: excerpt from The Wall Street Journal, Tuesday, Aug. 6, 2002.
- Journal article: Genetic Engineering News, Dec. 2002, Vol. 22(21), pages 1, 3, 70 & 80
- Meeting agenda, Applications of RNA Interference, Feb. 10-11, San Diego, CA

Attorney Docket No. 056100-5021-01
U.S. Patent No. 6,506,559

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:

Andrew Z. FIRE *et al.*

U.S. Patent No.: 6,506,559

Application No.: 09/215,257

Filed: December 18, 1998

Issued: January 14, 2003

For: GENETIC INHIBITION BY
DOUBLE STRANDED RNA

**PETITION UNDER 37 C.F.R. § 1.183
TO WAIVE THE RULES UNDER
37 CFR §3.81(a)**

**** Haul-Carry To Office Of Petitions
Crystal Plaza 4, Room 3-C23. ****

Office of Petitions

Assistant Commissioner for Patents

Washington, D.C. 20231

Sir:

This is a Petition under 37 C.F.R. § 1.183 to request that the requirements of 37 C.F.R. § 3.81(a) be waived to permit the correct names of the assignees of the above-mentioned patent to be provided after issuance of the patent. Accompanying this petition is a second petition requesting that the front page of the original Letters Patent be reprinted pursuant to 37 CFR §1.182 to reflect the correct names of the assigners. The original Letters Patent is surrendered herewith to facilitate reprinting of the first page.

On October 22, 2002, Applicant's agent submitted two copies of Issue Fee Transmittal Form PTOL-85B noting the sole assignee as "Carnegie Institute of Washington." This assignee designation was erroneous in two respects:

(1) A second assignment to "The University of Massachusetts" was recorded on March 19, 1999, at Reel/Frame 009825/0207 (copies of the Notice of Recordation and assignment documents are attached hereto); and

(2) "Carnegie Institute of Washington" contains an inadvertent error in that the word "Institute" should actually be "Institution" (see copies of Notice of Recordation and assignment attached hereto). Thus, the correct name of the first assignee should be "Carnegie Institution of Washington," and "The University of Massachusetts" should be included on the face of the patent as the second assignee.

The failure to include the correct information pertinent to the assignment held by the University of Massachusetts was an inadvertent oversight, as was the misspelling of the assignee name that was indicated on the Issue Fee Transmittal document, PTOL-85B. The error was recognized immediately upon the PTO's homepage posting of U.S. 6,506,559, and this petition and the accompanying petition under §1.182 have been filed immediately upon receipt of the original Letters Patent.

According to 37 CFR §1.183, in an extraordinary situation, when justice requires, any requirement of the regulations which is not a requirement of the statutes may be suspended or waived by the Commissioner or the Commissioner's designee, or on petition of the interested party, subject to such other requirements as may be imposed. In the present case, justice requires that the correct assignees be named on the face of the patent, because the patent covers one of the most important inventions of the year, an invention that is jointly owned by Carnegie Institution of Washington and The University of Massachusetts. We anticipate high public interest in this patent and wish to insure that the public is immediately cognizant of the co-ownership of the patent. Further, we wish to avoid public reliance on incomplete assignment information. These goals can only be achieved by reprinting the front page of US 6,506,559 and correcting the information in the electronic databases that are available to the public.

To demonstrate the importance of the invention claimed in U.S. Patent No. 6,506,559, attached hereto are several scientific articles demonstrating the excitement of the biotechnology community towards the claimed technology. For instance, the attached article recently published by Science magazine (Vol. 298, Dec. 20, 2002) heralded the technology - which has been dubbed "RNA interference" - as the #1 scientific breakthrough of the year 2002. The article further notes how the true power of double-stranded RNA in the inhibition of gene expression was not appreciated until the work of Andrew Fire of the Carnegie Institution of Washington, Craig Mello of the University of Massachusetts and their colleagues (the inventors of U.S. 6,506,559) (see the paragraph bridging columns 1 and 2, page 2296).

The attached excerpt from the Aug. 6, 2002, edition of The Wall Street Journal also discusses how the work of Andrew Fire and Craig Mello (two of the inventors of U.S. Patent 6,506,559) "set off a flurry of activity, as it dawned on scientists that if gene-silencing was working in plants, and now in worms, it might be a general phenomenon in all animals." Indeed, as summarized in a recent Genetic Engineering News article (Vol. 22, Dec. 21, 2002), several companies have since been founded solely on the promise of RNA interference therapies (see the bottom of col. 1 on page 3), and several other companies are supplying RNA interference reagents and kits for using RNA interference to silence gene expression in virtually any cell line (see first textual column on page 80). The attached copy of the agenda for the conference entitled Applications of RNA Interference to take place on February 10-11, 2003, in San Diego, California, also demonstrates the high quantity of recent activity that has occurred in the area of RNA interference.

U.S. Patent No. 6,506,559 is the first issued U.S. patent to cover methods of inhibiting gene expression using double stranded RNA. A substantial number of licensees have already

ATTORNEY DOCKET NO.: 056100-5021-01


Patent No.: 6,506,559

Petition Under 37 C.F.R. § 1.183 - Page 3

The \$130.00 petition fee required by 37 C.F.R. § 1.17(h) is being submitted with this Petition. Applicants have also included payment of \$100.00 for placement of a certificate of correction in the archives as advised by the Petitions Branch. The Commissioner is hereby authorized to charge any additional fees, or credit any overpayment, to Deposit Account 50-0310.

Respectfully submitted,

MORGAN, LEWIS & BOCKIUS LLP


Bonnie Weiss McLeod, Ph.D.
Reg. No. 43,255

January 22, 2003

CUSTOMER NO.: 009629
MORGAN, LEWIS & BOCKIUS LLP
1111 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
Telephone: 202-739-3000
Facsimile: 202-739-3001

Attachments:

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- Meeting agenda, Applications of RNA Interference, Feb. 10-11, San Diego, CA

056100-5021-01



US006506559B1

(12) **United States Patent**
Fire et al.

(10) **Patent No.:** **US 6,506,559 B1**
(45) **Date of Patent:** ***Jan. 14, 2003**

(54) **GENETIC INHIBITION BY
DOUBLE-STRANDED RNA**

(75) **Inventors:** Andrew Fire, Baltimore, MD (US);
Stephen Kostar, Chicago, IL (US);
Mary Montgomery, St. Paul, MN
(US); Lisa Timmons, Lawrence, KS
(US); SiQun Xu, Ballwin, MO (US);
Hiroyuki Taira, Shizuoka (JP);
Samuel E. Driver, Providence, RI
(US); Craig C. Mello, Shrewsbury, MA
(US)

3,107,065 A	4/1992	Shewmaker
3,190,931 A	3/1993	Inouye
3,208,149 A	5/1993	Inouye
3,258,360 A	11/1993	Carter
3,272,065 A	12/1993	Inouye
3,365,015 A	11/1994	Grierson et al.
3,453,566 A	9/1995	Shewmaker
3,738,985 A	4/1998	Miles
3,795,715 A	3/1998	Livache
3,874,555 A	2/1999	Dervan
3,972,704 A	10/1999	Diaper et al.
6,010,908 A	1/2000	Grucinski et al.
6,136,601 A	10/2000	Meyer, Jr. et al.

(73) **Assignee:** Carnegie Institute of Washington,
Washington, DC (US)

(*) **Notice:** This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) **Appl. No.:** 09/215,257

(22) **Filed:** Dec. 18, 1998

Related U.S. Application Data

(60) Provisional application No. 60/068,562, filed on Dec. 23, 1997.

(51) **Int. Cl.⁷** C12O 1/68; C12N 15/85
(52) **U.S. Cl.** 435/6; 435/91.1; 435/325
(58) **Field of Search** 514/44; 435/6;
435/91.1, 325

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,469,853 A	9/1984	Is'o et al.
4,511,713 A	4/1985	Miller et al.
5,034,373 A	7/1991	Jorgensen et al.

FOREIGN PATENT DOCUMENTS

WO	94/01550	1/1994
WO	99/32619	7/1999
WO	99/53050	10/1999
WO	99/61631	12/1999
WO	00/01846	1/2000
WO	00/65364	10/2000

OTHER PUBLICATIONS

Sharp, 1999, *Genes and Development*, 13:139-141.*
Clemens, et al., May 23, 2000, *Proc Natl Acad Sci*, early edition, <http://www.pnas.org/cgi/doi/10.1073/pnas.110149597>.*

(List continued on next page.)

Primary Examiner—Andrew Wang

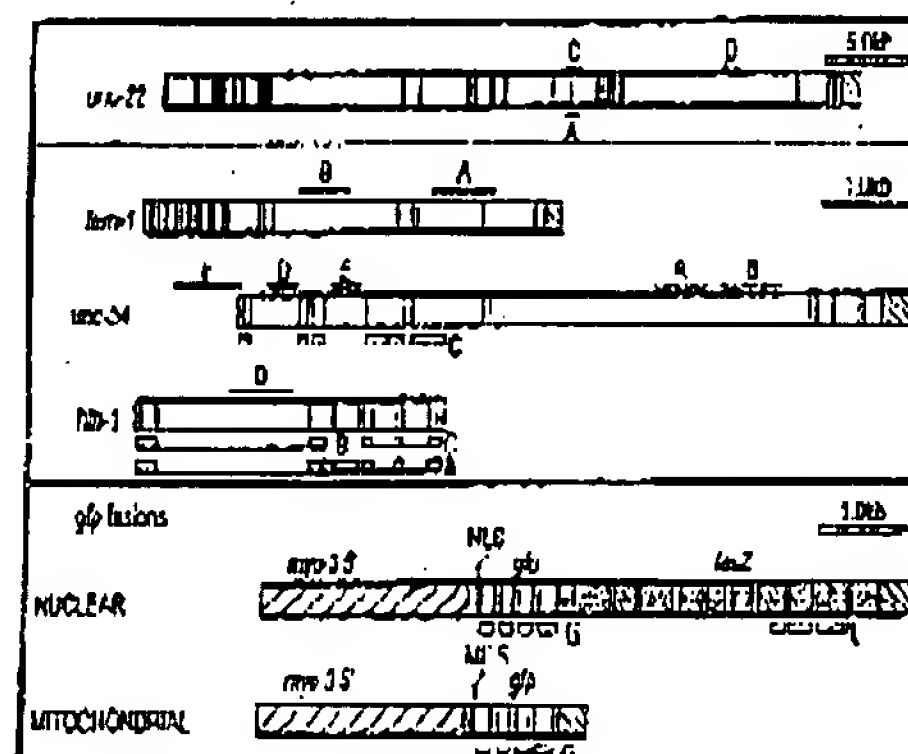
Assistant Examiner—Karen A Lacourciere

(74) *Attorney, Agent, or Firm*—Morgan, Lewis & Bockius LLP

(57) **ABSTRACT**

A process is provided of introducing an RNA into a living cell to inhibit gene expression of a target gene in that cell. The process may be practiced ex vivo or in vivo. The RNA has a region with double-stranded structure. Inhibition is sequence-specific in that the nucleotide sequences of the duplex region of the RNA and of a portion of the target gene are identical. The present invention is distinguished from prior art interference in gene expression by antisense or triple-strand methods.

22 Claims, 5 Drawing Sheets



NOVEMBER 29, 1999

PILLSBURY MADISON & SUTRO LLP
PAUL N. KOKULIS
1100 NEW YORK AVENUE, N.W.
NINTH FLOOR, EAST TOWER
WASHINGTON, D.C. 20005-3918



PTAS

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231



**CORRECTED
NOTICE**

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 03/19/1999

REEL/FRAME: 009825/0120
NUMBER OF PAGES: 11

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:
FIRE, ANDREW Z.

DOC DATE: 01/15/1999

ASSIGNOR:
MONTGOMERY, MAY K.

DOC DATE: 01/29/1999

ASSIGNOR:
TIMMONS, LISA

DOC DATE: 01/22/1999

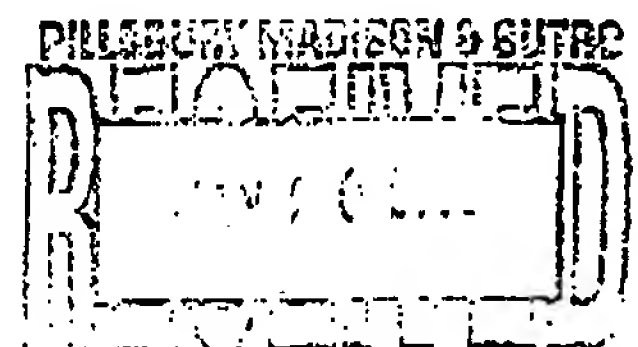
ASSIGNOR:
XU, SIQUN

DOC DATE: 01/12/1999

ASSIGNOR:
KOSTAS, STEPHEN A.

DOC DATE: 01/20/1999

ASSIGNEE:
CARNEGIE INSTITUTION OF
WASHINGTON, THE
1530 P STREET, N.W.
WASHINGTON, D.C. 20005



009835/0120 PAGE 2

SERIAL NUMBER: 09215257
PATENT NUMBER:

FILING DATE: 12/18/1998
ISSUE DATE:

JACQUELINE MOORE, PARALEGAL
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

BOX ASSIGNMENTS

11-16-1999

DO NOT USE FOR TRADEMARKS

TO THE ASSISTANT COMMISSIONER

101163112

SIR: PLEASE RECORD THE ATTACHED ORIGINAL DOCUMENTS OR COPY THEREOF.

1. NAME OF CONVEYING PARTY(IES) (ASSIGNOR(S)):

1. Andrew Z. Fire
3. Mary K. Montgomery
5. Lisa Timmons2. Siqun Xu
4. Stephen A. Kostas
6.
8.ADDITIONAL NAME(S) OF CONVEYING PARTY(IES) ATTACHED? ☐ YES ☒ NO

2. PARTY(IES) (ASSIGNEE(S)) RECEIVING INTEREST:

NAME: The Carnegie Institution of Washington

ADDRESS: 1530 P Street, N.W., Washington, D.C. 20005

ADDITIONAL NAME(S) & ADDRESS(ES) ATTACHED? ☐ YES ☒ NO

3. NATURE OF CONVEYANCE (DOCUMENT):

(Submit herewith only one document for recordation—multiple copies of same Assignment signed by different inventors is one document)☒ ASSIGNMENT OF ☒ WHOLE ☐ PART INTEREST☐ CHANGE OF NAME ☐ ACCURATE TRANSLATION
☐ SECURITY ☐ MERGER ☐ OTHER:EXEC. DATE: 1/12/99; 1/15/99; 1/20/99; 1/22/99;
1/29/99EXECUTION DATE(S) ON THE DECLARATION IF FILED HEREWITH: (NOTE: IF DATES ON DECLARATION AND
ASSIGNMENT DIFFER SEE ATTY!)4.5 APPL. NO.(S) OR PAT NO.(S). OTHERS ON ADDITIONAL SHEET(S) attached? ☐ YES ☒ NO

A. PAT. APP. NO.(S)

M#

1. INVENTOR
if not in item 1

B. PATENT NO.(S)

M#

1. INVENTOR
if not in item 1

09/215.257

256628

5. Name & Address of Party to Whom Correspondence
Concerning Document Should be Mailed:Pillsbury Madison & Sutro LLP
Intellectual Property Group
1100 NEW YORK AVENUE, N.W.
NINTH FLOOR, EAST TOWER
WASHINGTON, D.C. 20005-39186. NUMBER INVOLVED:
APPLNS 1 + PATS _____ = TOTAL 17. AMOUNT OF FEE ENCLOSED: (Code 581)
ABOVE TOTAL x \$40 = \$40

5.5 ATTY DKT:

PMS 256628

MATTER NO.

CLIENT REF.

8. IF ABOVE FEE IS MISSING OR INADEQUATE CHARGE
INSUFFICIENCY TO DEPOSIT ACCOUNT NUMBER: 03-3975
UNDER ORDER NO 20263 256628
dup. sheet not required CLIENT NO. MATTER NO.

03/22/1999 INBUTEN 00000278 09215257

01 EC:581

40.00 00

9. STATEMENT AND SIGNATURE

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of
the original document.Signature
Paul N. Kokulis Reg. No. 43,180

for Attorney: Paul N. Kokulis

Reg. No. 16773

Atty/Sec: PNK/kep

TEL: (202) 861-3503

Date: March 19, 1999

FAX: (202) 822-0944

10. Total number of pages including this
cover sheet, attachments and document
(do not file dup. Cover sheet)

11

FILE WITH PTO RETURN RECEIPT (PAT-103A)

PAT-110X 1200

INITIAL SCREENING OF INCOMING PAPERS CHECKLIST

Reviewer: K Chase

Date: 7-2-03

APPLICATION NO. 0500559 -57

1. PETITION TYPE CODE

☐ R137(a) Petition-----501
☐ R137(a) Petition -----509
 (Issue Fee/Dwgs)
☐ R137(b) Petition-----502
☐ R137(b) Petition-----510
 (Issue Fee/Dwgs)
☐ R137(f) Petition-----536
☐ R182 Petition-----519
☐ R183 Petition-----503
☐ R378(b) Petition-----532
☐ R378(c) Petition-----533
☐ R377 Petition-----521
☐ R3.81(b) Petition-----523
☐ R181 Petition-----515
☐ R181 Petition-----504

PETITION TYPE CODE

☐ R28c Petition-----321/320
☐ R47 Petition-----313
☐ R53(e) Petition-----408
☐ R53 (R62 filing date)----410
☐ R10 Petition-----411
☐ Lost Application-----412
☐ R78(a)(3) Petition-----535
☐ R78(a)(6) Petition-----535
☐ R55(c) Petition-----535
☐ R314 Petition-----508
☐ R55(a) Petition-----507
☐ Pet. W/D Abn-----525
☐ R705(b) PTA-Bef iss-----550
☐ R705(d) PTA-Aft iss-----551
☐ R705(c)PTA-SpiteDueCare-552
☐ Other _____

2. LIST PAPERS FILED WITH PETITIONS

<input type="checkbox"/> PreAmdt/Amdt	<input type="checkbox"/> CPA	<input type="checkbox"/> Associate POA
<input type="checkbox"/> Request CofC	<input type="checkbox"/> RCE	<input type="checkbox"/> Change of Address
<input type="checkbox"/> Reply/Arguments	<input type="checkbox"/> IDS	<input type="checkbox"/> Revocation/Poa
<input type="checkbox"/> Election	<input type="checkbox"/> Terminal Disclaimer	<input type="checkbox"/> Oath/Decl. & POA
<input type="checkbox"/> Notice of Appeal	<input type="checkbox"/> Issue Fee	<input type="checkbox"/> Priority Documents
<input type="checkbox"/> Brief (3)	<input type="checkbox"/> Drawings	<input type="checkbox"/> Statement 3.37(b)
<input type="checkbox"/> Reply Brief	<input type="checkbox"/> Rule 312 Amdt	<input type="checkbox"/> Rescind Non-Pub Req.
<input type="checkbox"/> Declaration R132	<input type="checkbox"/> Ext Time (____)	<input type="checkbox"/> Notice of Foreign Filing

Other Papers Match

3. Is paper a petition to withdraw holding of abandonment: yes no
 If so, send paper and/or file to appropriate location (**Note: remove any flag set first**):

- Nonreceipt of action from TC or assertion that reply was timely filed:
 Send paper to TC _____
- Nonreceipt of Missing Parts Notice or assertion that reply was timely filed:
 Send paper to DIRECTOR -OIPE - -CP2-7D25 (PH: 308-0910)
- Assertion of timely payment of issue fee and/or submission of drawings:
 Send petition to Office of Publications: ATTN: Tom Hawkins
- Other _____

4. Other: _____

If not handled in Office of Petitions, send paper to appropriate location.

5. Is petition accompanied by assignment papers, fee address, or other paper which needs to be sent to another location? yes no If so, make copy of assignment papers, fee address, or other paper; mail original to proper location and place copy in file with an indication that the original paper(s) has been forwarded to the appropriate location (Assignment Branch; Maintenance Fee Division, etc.)